



VETERINARY IRELAND

POLICY DOCUMENT
ON
ANTIMICROBIAL
RESISTANCE (AMR)
2014

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VETERINARY IRELAND NATIONAL COUNCIL
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Veterinary Ireland Policy Document on Antimicrobial Resistance

- *Veterinary Ireland* recognises the growing global problem of antimicrobial resistance (AMR) in human and animal medicine.
- *Veterinary Ireland* acknowledges that private veterinary practitioners (PVPs) in Ireland are the primary custodians of antimicrobial (AM) usage in animals and thus promotes the role and responsibility of the veterinary practitioner in the control of AMR.
- *Veterinary Ireland* advocates best practice in AM prescribing to all veterinary practitioners in Ireland.
- *Veterinary Ireland* acknowledges the excellent guidelines as laid out by the *Veterinary Council of Ireland* (VCI) in relation to the ethical prescribing of veterinary medicines.

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Introduction and background

Evidence of widespread antibiotic resistance among bacterial species in human and veterinary medicine has been mounting in recent years.

What is antimicrobial resistance?

Antimicrobial resistance (AMR) can be defined as the ability of microorganisms (in particular bacteria) to survive exposure to a specific concentration of a specific antimicrobial (or antibiotic) agent (or class of agents). In this document the words antibiotic and antimicrobial will be used interchangeably.

Mechanisms of Resistance

In order to examine the reasons for the increase in antibiotic resistance (AMR), and emergence of multi-drug resistance strains of bacteria, one should consider the mechanisms of resistance. Mechanisms for bacterial resistance are often categorized as either intrinsic or acquired. Intrinsic resistance mechanisms are those encoded by genes found on the chromosome of host organisms; are an integral property of the organism; and are not reflective of AM usage. Such mechanisms include the absence of antimicrobial target sites or the transport mechanisms which allow a particular AM to reach its target. Acquired resistance to antimicrobial drugs can develop in bacteria in two ways: pre-existing genes can mutate, or genes from other bacteria can be horizontally transferred to them. Both methods play a role in the mounting problem of antimicrobial resistance which faces human and veterinary medicine today. Spread of resistance occurs when resistance genes are transferred between organisms on plasmids, bacteriophages, transposons or other mobile genetic material. There are four main mechanisms by which microorganisms exhibit resistance to antibiotics. These include drug inactivation or modification, alteration of the antibiotic target site, alteration of metabolic pathways and reduced drug accumulation. Frequently bacteria carry resistance genes for several different classes of antibiotics resulting in multi-drug resistant bacteria. Since the discovery of the emergence and transfer of antibiotic resistance, new molecular tools for tracing individual genes, including those encoded on mobile elements, are being investigated with a view to monitoring AMR and developing control strategies.

Risk Factors

Risk factors for the development of AMR include the use of antimicrobials at a concentration close to or below the minimum inhibitory concentration (MIC), the overuse of antibiotics and the use of broad-spectrum antibiotics which affect an array of organisms including some that were not the intended target. The AMR crisis in human medicine did not develop overnight. Initially it was considered to be a problem only in hospitalised patients; however, in recent years the problem of AMR has extended into the general community. In reality, the cause of the AMR crisis is primarily the cumulative result of the widespread and extensive use of antimicrobials in human patients for over 70 years or so, coupled with ever changing social demographics, including the concentration of potentially high-risk vulnerable persons in day-care centres and nursing homes for the elderly, increased use of immunosuppressive drugs, and the ease and scale of mass movement of people generally. In this context, the role of animals in the development of resistance of human pathogens to antimicrobials is a secondary one and probably relatively finite; yet it is largely undocumented and warrants due recognition.

Reservoirs of resistance genes

Commensals

Reservoirs of AMR genes are thought to be in two categories – the first being commensal micro-flora, primarily of the gastrointestinal tract and other non-sterile body compartments of humans and animals. Understanding the human and animal health impact of the potential for gene traffic between commensals and pathogen is difficult, as the line between “commensal” and “pathogen” can be blurred depending on individual host species, for example, *S. aureus* can be commensal in one host, and yet be considered a potential pathogen in another. Likewise, what is commensal in one body system (*S. aureus* in the nasal passage) may be considered pathogenic in another (*S. aureus* in the bloodstream).

Environmental reservoir

The second major reservoir of AMR determinants arises from the environment and soil micro-biota. It has been suggested that the majority of transferable AMR genes in pathogens and commensals arose in, and were transferred from, environmental bacteria. However, there may be artificial selection pressures placed on this transfer through modern use of antimicrobials, and through the disruption of natural antimicrobial ecosystems due to the build-up of antimicrobial residues in the environment. This reservoir is significant in its own right, and warrants consideration from an epidemiological point of view.

Antibiotics in food production

The use of antimicrobial compounds in food animal production (despite proven demonstrable benefits including improved animal health, more efficient production and, in some cases, reduction in food-borne pathogens) has been linked to antibiotic resistance in human medicine and difficulties in the selection of therapeutic agents to treat infectious disease. In recent years, steps have been taken internationally, to control this effect. The selection of VRE (vancomycin resistant *Enterococci*) in chickens and pigs by avoparcin, a growth-promoting glycopeptide related to vancomycin, has led to its withdrawal from use in many countries. Streptogramins such as virginiamycin have also been withdrawn in some countries because of the induction of resistance to pristinamycin, a streptogramin recently introduced into human medicine to treat VRE. The overall effect of the use of antimicrobials in the food production industry on the development of AMR will not be accurately determined until all countries or jurisdictions legislate for veterinary prescription-only use of these drugs, regulate all routes of supply, ban the use of antibiotics as growth promoters and take a strategic approach to reduction of the general usage of antimicrobials.

Veterinary therapeutics

The increasing occurrence of antimicrobial resistance has serious implications for the treatment of animal disease. Resistance in animal pathogenic bacteria is now beginning to limit the therapeutic options available to veterinarians in the management of their patients. For example, MRSP (methicillin-resistant *Staphylococcus pseudintermedius*) has emerged as a problem in veterinary medicine since 2006 and strains of MRSP have been isolated that are resistant to all antimicrobials

currently authorised for use in animals. In farm animals, multi-drug resistant *Salmonella typhimurium* infections may be difficult to treat and this is also true of cases of *E. coli* septicaemia in which the organism may be resistant to six classes of antimicrobials.

Given that AMR has emerged over time, that it has multiple causes and now appears to be increasing at a rapid pace, its control and management will have to incorporate a multi-functional approach. Advances in research and new technology, combined with effective surveillance of antimicrobial resistance, prudent clinical-use practices and targeted education drives could together provide for a sustainable future for the use of antimicrobials in human and animal medicine.

Global concern for AMR development in human and animal health

1. In 2011, EFSA (European Food Safety Authority) and ECDC (European Centre for Disease Prevention and Control) compiled a joint report on AMR in zoonotic bacteria affecting humans, animals and food.
2. AMR is recognized as a global public health concern and has been recently addressed by The EU Commission's 'Action Plan against the rising threats of Anti-Microbial Resistance', 2011.
3. The WHO (World Health Organisation) has cited AMR as a major threat to public health worldwide and regards the use of antimicrobials on a large scale in food-producing animals as of particular concern regarding transferable resistance. WHO considers integrated surveillance at all stages of antimicrobial use along with monitoring of resistance patterns as critical elements to reduce the risk of the development of AMR.
4. The OIE (World Organisation for Animal Health), 2013, held the Global Conference on the Responsible and Prudent Use of Antimicrobial Agents for Animals. It published recommendations for national governments, suppliers, prescribers, retailers and users of antimicrobials which promote prudent use and sustained efficacy of antimicrobial drugs.
5. Surveys have been carried out on a European level by agencies such as FVE, HMA and FEEVA, to provide data on prescribing practices of veterinary practitioners in Europe with a view to contributing valuable information on the epidemiology of AMR.

As well as ESVAC, the European Surveillance System for Veterinary Antibiotic Consumption, which currently reports on 'sales data' of antimicrobials in Europe, programmes to monitor the use of antimicrobials in veterinary medicine in some EU countries are currently in operation. Germany has a voluntary system for pigs and poultry attached to Quality Assurance Schemes (QAS) and may introduce a compulsory system in the future. The Netherlands also developed a voluntary QAS with mandatory recording of AM use (via a database called Veterinary Central Information System, <http://www.vetcis.nl/>). The use of medicated feed was discontinued and above average declared antibiotic usage on farms is flagged-up, with a resultant reported reduction in declared AM use of over 50% over a two year period.

EU Council Recommendations to Member States on AMR

In June 2012, the EU Council adopted a "One Health" perspective on combatting the impact of AMR in the human health sector and in the veterinary sector. The Council recommended that all Member States should:

- Develop and implement communication guidelines and programmes for education and training of professionals on the appropriate use of antimicrobial agents and methods to reduce the transmission of pathogens, including infection control and hygiene measures in both the human health sector and the veterinary sector;
- Enforce national legislation preventing all illegal sales of antimicrobials including illegal sales over the Internet, in both the human health sector and the veterinary sector;
- Limit prescription and use of antimicrobials for herd treatment of animals to cases where a veterinarian has assessed that there is a clear clinical need and, where appropriate, epidemiological justification to treat all animals;
- Encourage incentives for animal production and marketing systems that serve the continuous improvement of animal health, including the prevention of diseases, and enhancement of hygiene measures and as a result reduce the need for antimicrobials;
- Ensure effective surveillance systems, including both the human health sector and the veterinary sector with the aim of collecting timely data that are comparable between sectors and Member States on AMR and on the use of antimicrobial agents;
- Transmit surveillance systems of data on the prescription and/or sales of all antimicrobial agents for use in humans;
- Collect data on the sale and use of antimicrobials in animals. In 2010, The European Medicines Agency set up The European Surveillance of Veterinary Antimicrobial Consumption (ESVAC) project to develop a harmonized approach for the collection and reporting of data on the use of antimicrobial agents in animals from EU Member States. In November 2013, the IMB reported the results of their fourth annual survey on the usage of veterinary antimicrobials in Ireland in 2012.
- Set up an intersectoral coordination mechanism at national level involving relevant authorities and sectors to monitor the implementation of the national strategies or action plans on antimicrobial use and resistance.
- Examine the conditions for prescription and sale of antimicrobials in order to ascertain whether practices in human and animal healthcare may lead to over-prescription, overuse or misuse of antimicrobials;
- Work actively to promote international initiatives to limit the use of antimicrobials which would include international requirements on prescription for antimicrobials, international requirements on surveillance and reporting of antimicrobial use and resistance and a global ban on antimicrobial growth promoters in animals;
- Work actively to promote adoption of rules at international level, including through WHO resolutions and OIE and Codex Alimentarius standards, for surveillance and reporting of antimicrobial use and resistance;
- Reinforce and coordinate research and innovation efforts to combat AMR and to maintain the efficacy and availability of existing antimicrobials, including through public-private collaboration.

Veterinary use of AMs in Ireland

Distribution and licencing of veterinary medicines in Ireland

In Ireland, antimicrobial veterinary medicinal products may be supplied only on prescription. The products are supplied into the trade by wholesalers that are authorised by the Department of Agriculture, Food and the Marine (DAFM). In accordance with the prescription of the prescribing veterinarian, the prescribed products can be dispensed either by the veterinarian or by a pharmacist. By way of exception to this principle, intramammary antimicrobial substances can also be dispensed by licensed agricultural merchants. Medicated feeds containing antimicrobials are prepared from authorised premixes, again under veterinary prescription. They are incorporated into the feed under a special authorisation granted by DAFM. The licences for incorporation are granted either to feed mills or to farms that possess appropriate facilities for the inclusion of medication.

It should be noted that the sale, supply, or possession of any unauthorised veterinary medicine in Ireland is a criminal offence. There is currently no legal basis requiring manufacturers or wholesalers to supply data relating to the volume of sales of authorised veterinary medicinal products. Each year, the Irish Medicines Board (IMB) collects data from veterinary pharmaceutical manufacturers that hold current Irish marketing authorisations. Marketing-authorisation holders are requested by the IMB to report only sales in Ireland. Importation of medicated feed is however permitted but in practice, given the logistics involved, this is not seen as a major route of supply into the country. (European Medicines Agency, European Surveillance of Veterinary Antimicrobial Consumption, 2013 'Sales of veterinary antimicrobial agents in 25 EU/EEA countries in 2011' (EMA/236501/2013)).

Current veterinary antimicrobial usage in Ireland

In November 2013, the IMB reported the results of their fourth annual survey on the usage of veterinary antimicrobials in Ireland (data for 2012) featuring 51 individual antibiotic substances contained in 699 product presentations. They reported an apparent increase of 14% in the usage of veterinary antibiotics (88.5 tonnes in 2011 as compared to 101.2 tonnes in 2012). **Fig. 1**, below, illustrates the distribution of sales of antimicrobials presented as antimicrobial groups, **Fig. 2** the pharmaceutical form breakdown (based on tonnes sold) of veterinary antibiotics sold in 2012 in Ireland.

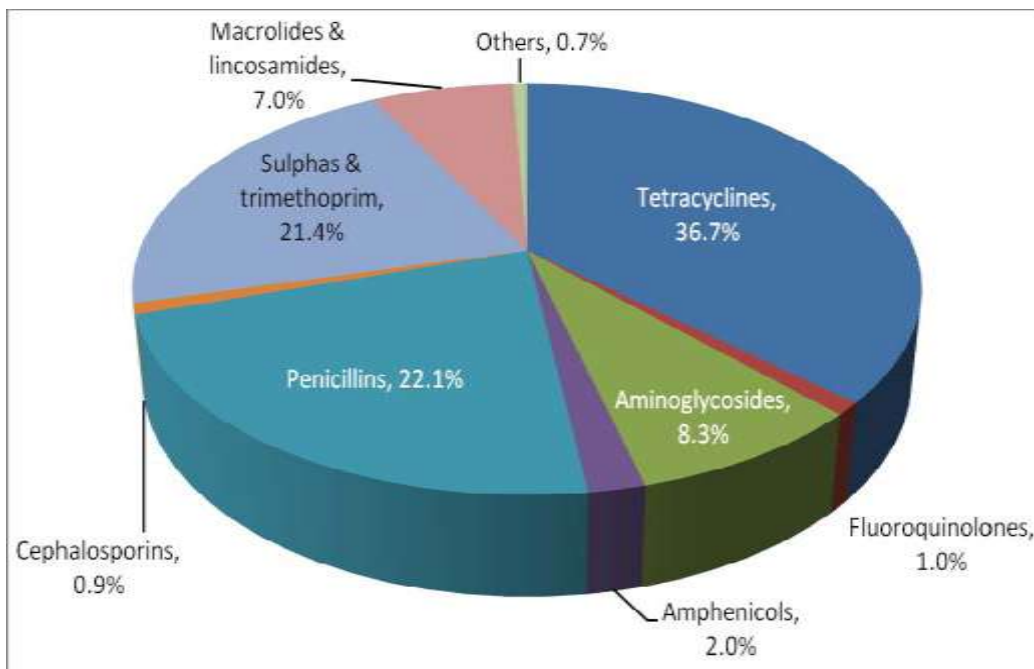


Fig. 1: Distribution of sales (based on tonnes sold) of veterinary antibiotics supplied in 2012 in Ireland. Report on consumption of veterinary antibiotics in Ireland during 2012 (Irish Medicines Board, 2013).

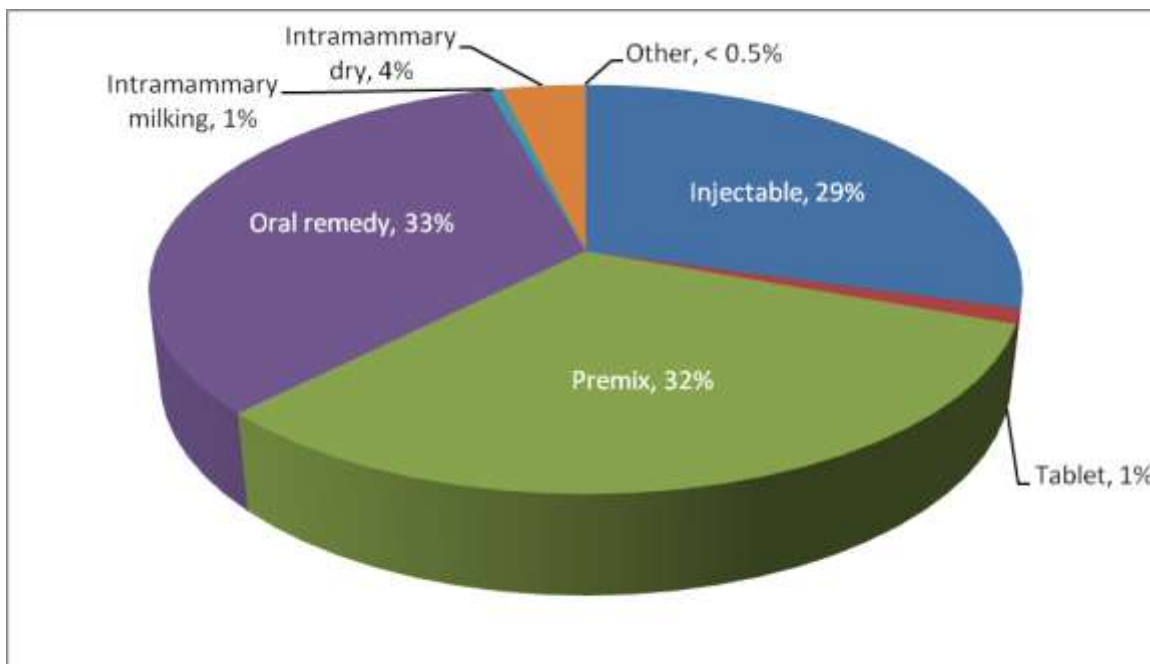


Fig. 2: Pharmaceutical form breakdown (based on tonnes sold) of veterinary antibiotics sold in 2012 in Ireland. Report on consumption of veterinary antibiotics in Ireland during 2012 (Irish Medicines Board, 2013).

Potential contributors to the development of AMR in animals in Ireland

The use and misuse (whether unnecessary, inappropriate or over/under-use) of antimicrobials in animals contributes to the development of AMR. In general, misuse of antimicrobials in animals occurs when there is a failure to ensure that antimicrobials are used only in accordance with a veterinary prescription issued under the principles of 'ethical veterinary practice', for example:

- Relaxation of the Animal Remedies Regulations 1996 in 2007 has resulted in farmer diagnosis of disease and instigation of treatment plans without prior veterinary examination.
- Owners/keepers of animals use antimicrobials procured from illegitimate sources e.g. other jurisdictions, the internet and via unethical prescribing and dispensing.
- Over or inappropriate use of in-feed antimicrobials.

Comments particular to industry sectors in Ireland

Poultry

In the poultry sector five processors currently account for in excess of 95% of poultry (broiler) production in Ireland. Recently, retailers (major supermarket chains predominantly), in line with a 'farm-to-fork' ethos, have begun to directly influence veterinary policy and practice (including antimicrobial inputs) in accordance with corporate (rather than scientific) policy. For example, antimicrobials are prescribed prophylactically in day old birds to decrease the incidence of bacterial yolk-sac infections and later to avert the negative growth and welfare effects of wet-litter in older birds. Both these AM use practices may serve to improve the overall survival rate of the birds but mask management and dietary deficiencies. Most of the antimicrobials administered to poultry are in the water soluble form. Most poultry farms are equipped with automatic dosing systems (water proportioners) so, provided that the numbers and weights of birds are recorded accurately, there should be no problem with accurate dosing.

Pigs

Premix antimicrobials account for 32% of national use and it is generally assumed that the pig industry accounts for most if not all of this total. Regardless of product diverted to other species the reality is that the pig industry has a significant problem on its hands with overuse, sub-therapeutic dosing and inappropriate use of antimicrobial agents.

As most Irish pig farmers have not invested in specialist water delivery systems that are commonplace on mainland Europe, the primary route of antimicrobial delivery is via the feed system as either purchased medicated-feed or self-medicated home milling (under license; there are 25 licensed feed mills and 40 licensed home-millers in Ireland). Since most rations are supplied or milled to cover a number of successive weeks of production, if a farmer legitimately needs to medicate piglets for the first week post-weaning (to treat meningitis for example) he/she is likely to continue to use the same medicated feed for up to four weeks or more in some cases. Pig farmers need to invest in feed delivery systems that will accommodate more targeted delivery of appropriate treatments at the correct dosage and duration.

Pig veterinary practitioners need to promote more appropriate, prudent and responsible AM use through the implementation of regularly updated health plans, the use of a broad range of newly available vaccines to reduce disease levels and antimicrobial use, and by embarking on an educational

programme of their clients to broaden their understanding of appropriate use levels and programmes and on how to remove their dependence on ongoing and continuous antimicrobial use in feed. Given the extent of antimicrobial use within the pig sector it is appropriate to consider the introduction of monitoring and surveillance programmes within the pig (and poultry) sector(s) to gauge prescribing practices and usage levels. This would highlight repeat prescribing, continuous prescribing and protracted prescribing practices. This data could be used to target certain use patterns with a view to reducing antimicrobial reliance and usage in the pig sector.

Cattle and Sheep

Veterinary Ireland has become increasingly aware that some animal farmers perceive that veterinary consultation/advice is an unnecessary cost rather than a benefit to business. This leads to inappropriate use of antimicrobials, e.g.

- Non-infectious calf scours treated with antimicrobials
- Blanket dry cow and lactating cow therapy without prior sensitivity testing
- Blanket treating of bought-in animals
- Incomplete duration of therapy
- Insufficient dosage (mg/kg)
- Poor antibiotic selection
- Treating with AMs where vaccination is more appropriate – e.g. IBR
- Poor herd health planning leading to increased antimicrobial use
- High levels of herd/flock lameness leading to increased AM usage

Companion Animals including Horses

Recent research has suggested that increased levels of pet ownership and increased levels of physical contact between pets and their owners should be taken into consideration when assessing the importance of companion animals acting as a reservoir of multiple drug resistant bacteria in the home. This is especially important when one considers that similar antimicrobial agents are used to treat infections in dogs and cats as are used in humans, namely amoxicillin-clavulanate, cephalosporins, fluoroquinolones, fusidic acid and erythromycin.

Most national surveillance programmes on antibiotic resistance in animals focus on food animals, and the role of pets in the dissemination of antibiotic resistance is given little attention. This is despite a number of case reports linking multi-drug resistant infections in pet owners and companion animal carriage, and reported links between multi-drug resistant infection in companion animals and carriage in veterinary personnel. Multi-drug resistance is frequently reported in companion animals, including horses. The evidence for multi-drug resistant infections as a potential zoonotic threat is also frequently reported. In 2005, Loeffler *et al.* reported that the rate of carriage of MRSA in the nasal and mucosal surfaces of veterinary professionals was much higher than that of the general public. The author found that in a small animal hospital in the UK 17.9% of employees were carriers of MRSA, 8.9% of animal patients were carriers of MRSA and 10% of surfaces swabbed in the hospital revealed isolates of MRSA. The MRSA carriage rate of the general population is approximately 1.5% (comparable to MRSA carriage rates in healthy animals in the community). Companion animal and equine practitioners are, therefore, integral in the control of the spread of multi-drug resistance in society.

Veterinary Ireland position

In 2013, *Veterinary Ireland* convened a Working Group (WG) from amongst members of its six Interest Groups to develop a policy document on AMR: the members are listed in Appendix I.

Veterinary Ireland, as the representative organisation for Registered Veterinary Practitioners (RVPs) in Ireland, aspires to contribute positively to the control of AMR and thus to be part of the solution to a developing problem. In line with the 'One Health' concept (<http://www.onehealthinitiative.com/>), *Veterinary Ireland* reiterates the complex, global and interspecies nature of this problem.

The development of AMR represents a threat to animal health/welfare and to public health. It is thus imperative that those responsible for prescribing, dispensing and using antimicrobials do so responsibly and appropriately – so that antimicrobials remain an effective remedy against pathogenic micro-organisms in animals and in humans.

In addition, this issue has the potential to impact adversely on animal welfare through the threatened loss of certain antimicrobials or classes of antimicrobials in veterinary medicine if these became legally reserved for use in humans only through being deemed 'critically important to human health'. The loss of certain (classes of) AMs from the veterinary armoury would critically impair the management of significant infectious disease conditions in animals with a resultant negative impact on welfare. The veterinary profession must continue to act responsibly by advocating the prudent use of AMs only in accordance with established best practice and retain access to a divergent range of antimicrobial agents.

The regulatory authorities (DAFM and VCI) must strengthen and enforce the relevant legislation so as to reduce inappropriate antimicrobial usage.

Veterinary Ireland Aims

1. To promote the overwhelmingly positive role of the veterinary profession in safeguarding animal health/welfare and public health through existing responsible antimicrobial usage;
 2. To continue to promote best practice in antimicrobial use among its membership;
 3. To highlight alternatives (such as conferred by herd health planning programmes) to AM usage;
 4. To highlight risks (of inappropriate antimicrobial usage);
 5. To re-affirm its commitment to engage with other relevant stakeholder groups, such as national medical organisations and international veterinary bodies, to develop coordinated strategies to combat the development of AMR, for the benefit of all.
1. ***Promote the overwhelmingly positive role of the veterinary profession in safeguarding animal health/welfare and public health through existing responsible AM usage;***
 - *Veterinary Ireland* at all times acts to strengthen the existing link between every farm and their chosen PVP. Veterinary practitioners in Ireland are the gatekeepers of animal health, offering a 24 hour service to their clients. PVPs must have real and not nominal knowledge of animal holdings and the particular circumstances therein, which is essential for the correct use of antimicrobials. Distance prescribing contributes to the problem of mass untargeted medication.

- *Veterinary Ireland* aims to promote the role PVPs have to play in technology transfer programmes, educating animal keepers in not alone disease reduction strategies but also in responsible antimicrobial usage.
- *Veterinary Ireland* aims to reinforce the message of *One Health* in its communications to the profession. Road shows are planned to reinforce to members their obligations in prescribing and to outline concerns regarding AMR.
- *Veterinary Ireland* has promoted the concept of herd health planning since its inception in 2001, and has led PVPs in the concept of 'prevention is better than cure'. The rise in sales of vaccines (preventative medicines) over the past ten years is a testament to the work being done by PVPs at farm level.
- All antimicrobials require a veterinary prescription in Ireland and the vast majority of PVPs take this responsibility very seriously. *Veterinary Ireland* intends to use its influence to lobby DAFM into taking action regarding unethical prescribing practices, acquisition by farmer purchasing groups of antibiotics from rogue traders both within and outside the State, distance prescribing under Schedule 8 and other loopholes in the legislation that allow inappropriate use of antimicrobials.
- PVPs in Ireland must complete a minimum of 20 hours of Continuing Veterinary Education (CVE) per annum to remain on the Register which keeps them up to date with modern concepts of veterinary medicine. Recently one such event was a webinar organized by VCI in conjunction with *Veterinary Ireland* and others, highlighting the issues with AMR. *Veterinary Ireland* aims to expand on such educational modules as part of its CVE programme.
- The profession has delegates on FVE, FECAVA and other bodies that have developed guides to best practice in the use of antimicrobials:

<http://www.epruma.eu/publications/brochures.html>

<http://www.fecava.org/sites/default/files/files/Hygiene%20poster.pdf>

http://www.fve.org/uploads/publications/docs/fve_antimicrobials_a3_hr03.pdf

- *Veterinary Ireland* is a key stakeholder in Animal Health Ireland and, together, these groups have put in place best practice guidelines for disease control and biosecurity, as well as producing technical information on calf rearing and non regulated diseases. Schemes have been launched such as the BVD eradication scheme, CellCheck and the Johnes' pilot programme - the success of which will result in lower disease levels and consequently lower use of antimicrobials.
- *Veterinary Ireland* recently submitted a policy document "Sustainable Animal Health" for consideration for the Rural Development Plan 2015-2020, a core concept of this policy is the reduction of AMR through disease minimisation.
- Intensive lobbying by *Veterinary Ireland* has recently led to the launch of a pilot project in Slaney Meats where post mortem data is being collected by Temporary Veterinary Inspectors (TVIs) on the slaughter line and being recorded on ICBF, making herd health planning more effective.

2. Continue to promote best practice in antimicrobial use among its membership

Established best practice should be:

- Re-enforced and strengthened where necessary so that PVPs only prescribe antimicrobials in accordance with robust scientific and ethical principle;
- Based on agreed existing guidelines (produced by EPRUMA, FECAVA, FVE etc.) concerning the appropriate selection of clinical circumstances, alternatives to antimicrobials, specific antimicrobial agents and dosage schedules by PVPs.

There should be a renewed emphasis on and enforcement of *'ethical veterinary practice'* such that:

- A. The animal (herd or flock) is under the care of the PVP (or another member of the group veterinary practice of which the PVP is a member) as set out in Regulation 43 (8) (a), (b), (c), (d) and (e).
- B. In relation to Regulation 43 (8) (c), the PVP (or other member of the group veterinary practice) is:
 - a. available, or
 - b. has made alternative arrangements for another veterinary practice which is situated sufficiently close to the animal or animals in question to respond to requests (at the holding, where appropriate) on a 24 hour Emergency Service basis to provide veterinary services to the animal, herd or flock as per the normal requirements of client "follow up" or monitoring of disease conditions.
- C. Where a veterinary practitioner is requested, in the absence of a clinical examination, to provide services to animals under his/her care, the provision of service would be based on:
 - a. the records of disease in the herd or flock, and
 - b. an assessment of laboratory test results on the animal or cohort animals in question, or
 - c. a request by another veterinary practitioner, under whose care the animal was/animals were and, who has carried out an assessment of their condition and has requested another veterinary practitioner to administer an animal remedy.

3. *Highlight the benefits of herd health planning and on-farm risk assessment by PVPs*

Reducing the availability of antimicrobials on farm will select for the implementation of herd health strategies at farm level. Greater PVP involvement in the decision-making process will allow for timely advice on:

- hygiene, disinfection and Biosecurity;
- the importance of colostrum, nutrition and purchasing policies;
- disease prevention strategies.

4. *Highlight the risks (of inappropriate AM usage)*

A national educational campaign should be conducted (aimed at each section of the antimicrobial chain from manufacturer to vet to end-user clientele) in order to promote awareness of:

- The risks posed by AMR;
- The progress made on replacing AMs in veterinary and human medicine with alternate strategies such as vaccination and infection control programmes;
- The difference between antimicrobial residues and AMR;
- The reasons why antimicrobial use should be restricted in line with prudent use policies.

5. *Re-affirm its commitment to engage with other relevant stakeholder groups, such as national medical organisations and international veterinary bodies, to develop coordinated strategies to combat the development of AMR, for the benefit of all*

Veterinary Ireland recommendations

1. A national educational campaign should be conducted by stakeholders including *Veterinary Ireland* as well as DAFM, VCI, AHI and the IMB (aimed at each section of the AM supply chain from manufacturer to vet/other wholesaler/retailer to end-user) in order to promote awareness of:
 - The risks posed by AMR;
 - The progress made on replacing AMs in veterinary medicine with preventative measures;
 - The difference between antimicrobial residues in food and anti-microbial resistance;
 - The reasons why antimicrobial use should be restricted in line with prudent use policies.
2. There should be appropriate legislative change (with enforcement) in relation to the prescribing/use of antimicrobials in animals:
 - The prevention, by DAFM of the acquisition by farmer purchasing groups of large amounts of antibiotics from rogue traders both within and outside the State, for use in the future without a veterinary consultation.
 - Schedule 8 and Regulation 43(9) of the European Communities (Animal Remedies) Regulations, 2007 (ARR) should be repealed to ensure that intramammary antibiotic remedies can be prescribed only as per other antimicrobial products for animals.
 - Ethical Veterinary Practice (as per the Veterinary Practice Act of 2005) should be enshrined in the legal enforcement of the ARR.
 - DAFM (the Department of Agriculture) and the VCI (Veterinary Council) should apply a conjoined approach to the enforcement of legislation such that Registered Veterinary Practitioners (RVPs) prescribing antimicrobials operate through a registered veterinary premises and demonstrate on-going and real, not nominal, veterinary clinical contact with animal keepers.
 - AMs should only be supplied to a registered veterinary practitioner at their registered veterinary practice.
 - Legal and financial penalties should be levied on commercial companies that employ RVPs to supply antimicrobials outside ethical veterinary practice (see appendix III for further detail).
3. Herd/group treatment of animals with antimicrobials should be limited to cases where on farm veterinary involvement deems the need. The practice of mass medication should be reviewed at national level in line with EU recommendations.
4. The principles of *Veterinary Ireland's* policy document "Sustainable Animal Health" should be incorporated into Food Harvest 2020, in order to minimize expansion-related disease and associated AM usage.
5. Funding should be made available by DAFM to promote PVP led on-farm technology transfer and risk assessment in order to reduce disease levels and hence antimicrobial usage.
6. Bord Bia Quality Assurance schemes should insist on the requirement for a meaningful on-farm risk assessment and antimicrobial management plan by the farms' PVP, the fee for which should be paid centrally. The level of reduction in declared antimicrobial usage on these farms over a period of time could then be assessed.

7. Funding should be ringfenced for Research & Development into novel antimicrobials or alternatives to conventional antibiotics and consideration given to either patent extension for novel products and/or a levy on generic antimicrobials.
8. Critically important antimicrobials should be recategorised as Veterinary Practitioner Only (VPO), to restrict usage.

Appendix I: Contributors to the Working Group

In alphabetical order (with primary Veterinary Ireland Interest Group; and other role)

Deidre Campion (Education, Research & Industry - ERI)
Joe Collins (ERI; Chair of the Working Group)
Vivienne Duggan (Equine; President 2014)
Conor Geraghty (Food Animal)
Danny Holmes (Companion Animal)
Pat Kirwan (Food Animal)
Richard Lane (Food Animal)
Nola Leonard (ERI)
Donal Lynch (Food Animal; President 2013)
Peter Murphy (Companion Animal)
Sean O'Laoide (Local Authority)
John O'Roarke (Food Animal; Vice-President 2014)
Peadar Ó Scanail (Equine)
Frank O'Sullivan (Food Animal)
Pat Talty (State Sector)
Mairead Wallace-Pigott (Food Animal)

Appendix II: List of Sources

(In alphabetical order)

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VETERINARY IRELAND

**POLICY DOCUMENT
ON
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2014**

**RATIFIED BY
VETERINARY IRELAND NATIONAL COUNCIL
29TH MAY 2014**